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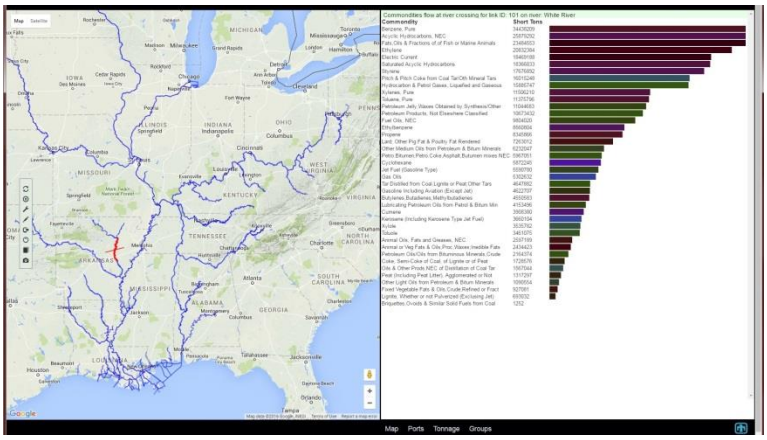
MISSISSIPPI RIVER COMMODITY EXPLORER

MODEL OVERVIEW

The National Infrastructure Simulation and Analysis Center (NISAC) developed the Mississippi River Commodity Explorer (MSCX) as an interactive visualization of commodity shipments on the Mississippi River transportation system coupled with a model of re-routing given disruption. Driven by multiple data sources feeding a network simulation algorithm, MSCX informs analysts as to the type, amount, origin, and destination of shipments that could be impacted by a disruption on the Mississippi River transportation system.

MODEL CHARACTERISTICS

- Highly detailed display of data regarding origin, destination, and commodity type of shipments.
- Interactive, intuitive, and web deployed.
- Up-to-date description of the Mississippi River transportation network coupled with a detailed origin-destination database of commodity shipments.
- Network detail, shipment information, and custom level of data aggregation, dependent on map view.
- Information on river segment utilization and impact to traffic given a particular disruption.



Commodity flow data for selected river segment (simulated).

MODEL APPLICATIONS

- Used in rapid response activities.
- Long-term analysis to support hurricane preparedness planning.
- Integrated analysis of national or global commodity transportation.
- Analysis of supply chain impacts for New Madrid earthquake scenarios.
- Storytelling functionality enables analyst to convey information using interactive screenshots and annotations.

QUESTIONS ADDRESSED

Given a disruption to capacity on the Mississippi River transportation system, the MSCX is designed to assist decision makers by answering the following types of questions:

- What commodities commonly use the disrupted pathway?
- Are these shipments more reliant on this pathway in certain months?
- From where are commodities being shipped using this pathway? With what intended destinations?
- Who is the point of contact at the shipping origin and at the intended destination?
- What are the alternative waterborne pathways that the shipment could take?

ABOUT OCIA

The Department of Homeland Security, National Protection and Programs Directorate's (NPPD) Office of Cyber and Infrastructure Analysis (OCIA) manages NISAC, which is a Congressionally mandated center of excellence in modeling, simulation, and analysis of critical infrastructure.

CONTACTS

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